

SEQUENCE LISTING

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<120> MODULATION OF EPIDERMAL GROWTH FACTOR HETERODIMER ACTIVITY

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<170> PatentIn version 3.3

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Asp	Thr	Phe	Leu	Pro	Val	Pro	Glu	Tyr	Ile	Asn	Gln	Ser	Val	Pro		1085	1090	1095
Lys	Arg	Pro	Ala	Gly	Ser	Val	Gln	Asn	Pro	Val	Tyr	His	Asn	Gln		1100	1105	1110
Pro	Leu	Asn	Pro	Ala	Pro	Ser	Arg	Asp	Pro	His	Tyr	Gln	Asp	Pro		1115	1120	1125
His	Ser	Thr	Ala	Val	Gly	Asn	Pro	Glu	Tyr	Leu	Asn	Thr	Val	Gln		1130	1135	1140
Pro	Thr	Cys	Val	Asn	Ser	Thr	Phe	Asp	Ser	Pro	Ala	His	Trp	Ala		1145	1150	1155
Gln	Lys	Gly	Ser	His	Gln	Ile	Ser	Leu	Asp	Asn	Pro	Asp	Tyr	Gln		1160	1165	1170
Gln	Asp	Phe	Phe	Pro	Lys	Glu	Ala	Lys	Pro	Asn	Gly	Ile	Phe	Lys		1175	1180	1185
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Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys
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Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro
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Ser Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu
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Leu Phe Ile Val Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg
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Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile
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 atg gag ctg gcg gcc ttg tgc cgc tgg ggg ctc ctc ctc gcc ctc ttg 286
 Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
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 Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
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cag agg ctg cgg att gtg cga ggc acc cag ctc ttt gag gac aac tat Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr 100 105 110	574
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Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu	
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Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys	
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Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp	
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Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro	
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Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu	
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Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
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Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
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Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys
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Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
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Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
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Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
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Gln Gly Tyr Met Leu Ile Ala His Asn Arg Val Lys His Val Pro Leu
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Ala Leu Ala Val Leu Asp Asn Arg Asp Pro Leu Asp Asn Val Thr Thr
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Cys Pro Pro Cys Ala Pro Thr Cys Lys Asp Asn His Cys Trp Gly Glu	
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Pro Glu Ser Phe Gln Asp Leu Ser Val Phe Gln Asn Leu Arg Val Ile
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Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
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His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
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Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
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Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
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Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
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His Gly Leu Thr Asn Lys Lys Leu Glu Glu Val Glu Leu Glu Pro Glu
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Thr	Pro	Leu	Ser	Pro	Pro	Gly	Leu	Glu	Glu	Glu	Asp	Val	Asn	Gly
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Tyr	Val	Met	Pro	Asp	Thr	His	Leu	Lys	Gly	Thr	Pro	Ser	Ser	Arg
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 cta aac ggg ctg agt gtg acc ggc gat gct gac aac cag tac cag aca 144
 Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Asp Asn Gln Tyr Gln Thr
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 ctg tac aaa ctc tat gag aag tgt gag gtg gtc atg ggt aac ctg gag 192
 Leu Tyr Lys Leu Tyr Glu Lys Cys Glu Val Val Met Gly Asn Leu Glu
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 Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
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 Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Val
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ctg ccc tta cct aac ctc cga gtg gtc cgg gga acc cag gtc tac gat	336
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Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser	
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His Ala Leu Arg Gln Leu Arg Phe Thr Gln Leu Thr Glu Ile Leu Leu	
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Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr	
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Lys Asn Asn Gly Gly Asn Cys Pro Pro Cys His Glu Val Cys Lys Gly	
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Arg Cys Trp Gly Pro Gly Pro Glu Asp Cys Gln Ile Leu Thr Lys Thr	
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Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp	
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Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val	
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Pro Arg Cys Pro Ala Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu	
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Glu Pro Asn Pro His Ile Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala	
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Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Phe Cys Val Arg Ala	
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Cys Val Thr His Cys Asn Val Leu Gln Gly Glu Pro Arg Glu Phe Val	
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His Glu Ala His Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu	
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Arg Leu Asp Ile Lys Tyr Asn Arg Pro Leu Gly Glu Cys Val Ala Glu
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Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
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His Glu Ala His Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
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Leu Arg Lys Tyr Tyr Glu Asn Cys Glu Val Val Met Gly Asn Leu Glu
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Ile Thr Ser Ile Glu His Asn Arg Asp Leu Ser Phe Leu Arg Ser Val
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Arg Glu Val Thr Gly Tyr Val Leu Val Ala Leu Asn Gln Phe Arg Tyr
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Leu Pro Leu Glu Asn Leu Arg Ile Ile Arg Gly Thr Lys Leu Tyr Glu
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Asp Arg Tyr Ala Leu Ala Ile Phe Leu Asn Tyr Arg Lys Asp Gly Asn
115 120 125

Phe Gly Leu Gln Glu Leu Gly Leu Lys Asn Leu Thr Glu Ile Leu Asn
130 135 140

Gly Gly Val Tyr Val Asp Gln Asn Lys Phe Leu Cys Tyr Ala Asp Thr
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Ile His Trp Gln Asp Ile Val Arg Asn Pro Trp Pro Ser Asn Leu Thr
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Leu Val Ser Thr Asn Gly Ser Ser Gly Cys Gly Arg Cys His Lys Ser
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Cys Thr Gly Arg Cys Trp Gly Pro Thr Glu Asn His Cys Gln Thr Leu
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 Pro Lys Asp Thr Asp Cys Phe Ala Cys Met Asn Phe Asn Asp Ser Gly
 245 250 255
 Ala Cys Val Thr Gln Cys Pro Gln Thr Phe Val Tyr Asn Pro Thr Thr
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 Cys Val Lys Lys Cys Pro His Asn Phe Val Val Asp Ser Ser Ser Cys
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 Val Arg Ala Cys Pro Ser Ser Lys Met Glu Val Glu Glu Asn Gly Ile
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 Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile Asn Gly Asn Leu Ile Phe
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 Leu Val Thr Gly Ile His Gly Asp Pro Tyr Asn Ala Ile Glu Ala Ile
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 Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn Met Thr Asp Phe Ser Val
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 Phe Ser Asn Leu Val Thr Ile Gly Gly Arg Val Leu Tyr Ser Gly Leu
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 Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile Thr Ser Leu Gln Phe Gln
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 Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile Tyr Ile Thr Asp Asn Ser
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Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp Thr Thr Leu Phe Ser Thr
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Ile Asn Gln Arg Ile Val Ile Arg Asp Asn Arg Lys Ala Glu Asn Cys
 485 490 495

Thr Ala Glu Gly Met Val Cys Asn His Leu Cys Ser Ser Asp Gly Cys
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Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser Cys Arg Arg Phe Ser Arg
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Gly Arg Ile Cys Ile Glu Ser Cys Asn Leu Tyr Asp Gly Glu Phe Arg
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Glu Phe Glu Asn Gly Ser Ile Cys Val Glu Cys Asp Pro Gln Cys Glu
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Lys Met Glu Asp Gly Leu Leu Thr Cys His Gly Pro Gly Pro Asp Asn
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Cys Thr Lys Cys Ser His Phe Lys Asp Gly Pro Asn Cys Val Glu Lys
 580 585 590

Cys Pro Asp Gly Leu Gln Gly Ala Asn Ser Phe Ile Phe Lys Tyr Ala
 595 600 605

Asp Pro Asp Arg Glu Cys His Pro Cys His Pro Asn Cys Thr Gln Gly
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Cys Asn Gly Pro Thr Ser His Asp Cys Ile Tyr Tyr Pro Trp Thr Gly
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His Ser Thr Leu Pro Gln His Ala Arg Thr Pro Leu Ile Ala Ala Gly
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Val Ile Gly Gly Leu Phe Ile Leu Val Ile Val Gly Leu Thr Phe Ala
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Val Tyr Val Arg Arg Lys Ser Ile Lys Lys Lys Arg Ala Leu Arg Arg
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Phe Leu Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Thr Ala
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Pro Asn Gln Ala Gln Leu Arg Ile Leu Lys Glu Thr Glu Leu Lys Arg
705 710 715 720

Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Ile
725 730 735

Trp Val Pro Glu Gly Glu Thr Val Lys Ile Pro Val Ala Ile Lys Ile
740 745 750

Leu Asn Glu Thr Thr Gly Pro Lys Ala Asn Val Glu Phe Met Asp Glu
755 760 765

Ala Leu Ile Met Ala Ser Met Asp His Pro His Leu Val Arg Leu Leu
770 775 780

Gly Val Cys Leu Ser Pro Thr Ile Gln Leu Val Thr Gln Leu Met Pro
785 790 795 800

His Gly Cys Leu Leu Glu Tyr Val His Glu His Lys Asp Asn Ile Gly
805 810 815

Ser Gln Leu Leu Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Met
820 825 830

Tyr Leu Glu Glu Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn
835 840 845

Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe Gly Leu
850 855 860

Ala Arg Leu Leu Glu Gly Asp Glu Lys Glu Tyr Asn Ala Asp Gly Gly
865 870 875 880

Lys Met Pro Ile Lys Trp Met Ala Leu Glu Cys Ile His Tyr Arg Lys
885 890 895

Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Ile Trp Glu
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Leu Met Thr Phe Gly Gly Lys Pro Tyr Asp Gly Ile Pro Thr Arg Glu
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Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile
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Cys Thr Ile Asp Val Tyr Met Val Met Val Lys Cys Trp Met Ile Asp
 945 950 955 960

Ala Asp Ser Arg Pro Lys Phe Lys Glu Leu Ala Ala Glu Phe Ser Arg
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Met Ala Arg Asp Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Asp Arg
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Met Lys Leu Pro Ser Pro Asn Asp Ser Lys Phe Phe Gln Asn Leu Leu
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Asp Glu Glu Asp Leu Glu Asp Met Met Asp Ala Glu Glu Tyr Leu
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Val Pro Gln Ala Phe Asn Ile Pro Pro Pro Ile Tyr Thr Ser Arg
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Ala Arg Ile Asp Ser Asn Arg Ser Glu Ile Gly His Ser Pro Pro
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Ala Glu Ile Phe Asp Asp Ser Cys Cys Asn Gly Thr Leu Arg Lys
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Pro Val Ala Pro His Val Gln Glu Asp Ser Ser Thr Gln Arg Tyr
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Ser Ala Asp Pro Thr Val Phe Ala Pro Glu Arg Ser Pro Arg Gly
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Glu Leu Asp Glu Glu Gly Tyr Met Thr Pro Met Arg Asp Lys Pro
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Lys Gln Glu Tyr Leu Asn Pro Val Glu Glu Asn Pro Phe Val Ser
 1160 1165 1170

Arg Arg Lys Asn Gly Asp Leu Gln Ala Leu Asp Asn Pro Glu Tyr
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His Asn Ala Ser Asn Gly Pro Pro Lys Ala Glu Asp Glu Tyr Val
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Asn Glu Pro Leu Tyr Leu Asn Thr Phe Ala Asn Thr Leu Gly Lys
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Ala Glu Tyr Leu Lys Asn Asn Ile Leu Ser Met Pro Glu Lys Ala
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Lys Lys Ala Phe Asp Asn Pro Asp Tyr Trp Asn His Ser Leu Pro
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Pro Arg Ser Thr Leu Gln His Pro Asp Tyr Leu Gln Glu Tyr Ser
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Thr Lys Tyr Phe Tyr Lys Gln Asn Gly Arg Ile Arg Pro Ile Val
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 Thr Val Cys Ala Gly Thr Glu Asn Lys Leu Ser Ser Leu Ser Asp Leu
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 gaa cag cag tac cga gcc ttg cgc aaa tac tat gaa aac tgc gag gta 144
 Glu Gln Gln Tyr Arg Ala Leu Arg Lys Tyr Tyr Glu Asn Cys Glu Val
 35 40 45

gtc atg ggc aac ctg gag atc acc agc atc gag cac aac cgg gac ctc Val Met Gly Asn Leu Glu Ile Thr Ser Ile Glu His Asn Arg Asp Leu 50 55 60	192
tcc ttc ctg cgg tct atc cga gaa gtc aca ggc tac gtc ctg gtg gcc Ser Phe Leu Arg Ser Ile Arg Glu Val Thr Gly Tyr Val Leu Val Ala 65 70 75 80	240
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ggg aca aaa cta tat gaa gat cgc tat gcc tta gcg ata ttc tta aac Gly Thr Lys Leu Tyr Glu Asp Arg Tyr Ala Leu Ala Ile Phe Leu Asn 100 105 110	336
tac agg aaa gat ggc aac ttt gga ctc caa gaa ctt gga tta aag aac Tyr Arg Lys Asp Gly Asn Phe Gly Leu Gln Glu Leu Gly Leu Lys Asn 115 120 125	384
ctg acc gaa ata cta aat ggt gga gtc tat gta gac cag aac aaa ttc Leu Thr Glu Ile Leu Asn Gly Gly Val Tyr Val Asp Gln Asn Lys Phe 130 135 140	432
cta tgt tat gct gac act ata cac tgg caa gat att gtt cgg aat cca Leu Cys Tyr Ala Asp Thr Ile His Trp Gln Asp Ile Val Arg Asn Pro 145 150 155 160	480
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Val Glu Glu Asn Gly Ile Lys Met Cys Lys Pro Cys Thr Asp Ile Cys	
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Pro Lys Ala Cys Asp Gly Ile Gly Thr Gly Ser Leu Met Ser Ala Gln	
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Thr Val Asp Ser Ser Asn Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile	
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Asn Gly Asn Leu Ile Phe Leu Val Thr Gly Ile His Gly Asp Pro Tyr	
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Asn Ala Ile Asp Ala Ile Asp Pro Glu Lys Leu Asn Val Phe Arg Thr	
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Val Arg Glu Ile Thr Gly Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn	
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Met Thr Asp Phe Ser Val Phe Ser Asn Leu Val Thr Ile Gly Gly Arg	
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Val Leu Tyr Ser Gly Leu Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile	
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Thr Ser Leu Gln Phe Gln Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile	
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Tyr Ile Thr Asp Asn Ser Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp	
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Arg Arg Ala Glu Asn Cys Thr Ala Glu Gly Met Val Cys Asn His Leu	
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Cys Ser Asn Asp Gly Cys Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser	
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Cys Arg Arg Phe Ser Arg Gly Lys Ile Cys Ile Glu Ser Cys Asn Leu	
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cca aac tgc acc cag ggg tgt aac ggt ccc act agt cat gac tgc att Pro Asn Cys Thr Gln Gly Cys Asn Gly Pro Thr Ser His Asp Cys Ile 610 615 620	1872
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aaa cgt gct ttg agg aga ttc ctg gag aca gag ctg gta gag ccc tta Lys Arg Ala Leu Arg Arg Phe Leu Glu Thr Glu Leu Val Glu Pro Leu 675 680 685	2064
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gaa acc gaa cta aag agg gta aag gtc ctt ggc tcg gga gct ttt gga Glu Thr Glu Leu Lys Arg Val Lys Val Leu Gly Ser Gly Ala Phe Gly 705 710 715 720	2160
acc gtt tat aaa ggt att tgg gtg cct gaa ggt gaa aca gtg aaa atc Thr Val Tyr Lys Gly Ile Trp Val Pro Glu Gly Glu Thr Val Lys Ile 725 730 735	2208
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Ile Tyr Thr Ser Arg Thr Arg Ile Asp Ser Asn Arg Ser Glu Ile	
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Met Pro Tyr Arg Ala Thr Thr Ser Thr Ile Pro Glu Ala Pro Val	
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Gly Thr Leu Arg Lys Pro Val Ala Pro His Val Gln Glu Asp Ser	
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Ser Thr Gln Arg Tyr Ser Ala Asp Pro Thr Val Phe Ala Pro Glu	
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Val Pro Glu Lys Ala Lys Lys Ala Phe Asp Asn Pro Asp Tyr Trp	
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Asn His	Ser Leu Pro Pro Arg	Ser Thr Leu Gln His	Pro Asp Tyr	
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ctg cag	gaa tac agc aca aaa	tat ttt tat aaa	cag aat gga cgg	3789
Leu Gln	Glu Tyr Ser Thr Lys	Tyr Phe Tyr Lys	Gln Asn Gly Arg	
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atc cgc	ccc att gtg gca gag	aat cct gag tac ctc	tcg gag ttc	3834
Ile Arg	Pro Ile Val Ala Glu	Asn Pro Glu Tyr Leu	Ser Glu Phe	
1265	1270	1275		

tcg ctg	aag cct ggc act atg	ctg ccc cct ccg ccc	tac aga cac	3879
Ser Leu	Lys Pro Gly Thr Met	Leu Pro Pro Pro Pro	Tyr Arg His	
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Arg Asn	Thr Val Val			
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Glu Gln	Gln Tyr	Arg Ala	Leu Arg	Lys Tyr	Tyr Glu	Asn Cys	Glu Val
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Val Met	Gly Asn	Leu Glu	Ile Thr	Ser Ile	Glu His	Asn Arg	Asp Leu
50		55			60		

Ser Phe	Leu Arg	Ser Ile	Arg Glu	Val Thr	Gly Tyr	Val Leu	Val Ala
65		70			75		80

Leu Asn	Gln Phe	Arg Tyr	Leu Pro	Leu Glu	Asn Leu	Arg Ile	Ile Arg
	85			90			95

Gly Thr	Lys Leu	Tyr Glu	Asp Arg	Tyr Ala	Leu Ala	Ile Phe	Leu Asn
	100			105		110	

Tyr Arg	Lys Asp	Gly Asn	Phe Gly	Leu Gln	Glu Leu	Gly Leu	Lys Asn
	115		120			125	

Leu Thr Glu Ile Leu Asn Gly Gly Val Tyr Val Asp Gln Asn Lys Phe
 130 135 140

Leu Cys Tyr Ala Asp Thr Ile His Trp Gln Asp Ile Val Arg Asn Pro
 145 150 155 160

Trp Pro Ser Asn Met Thr Leu Val Ser Thr Asn Gly Ser Ser Gly Cys
 165 170 175

Gly Arg Cys His Lys Ser Cys Thr Gly Arg Cys Trp Gly Pro Thr Glu
 180 185 190

Asn His Cys Gln Thr Leu Thr Arg Thr Val Cys Ala Glu Gln Cys Asp
 195 200 205

Gly Arg Cys Tyr Gly Pro Tyr Val Ser Asp Cys Cys His Arg Glu Cys
 210 215 220

Ala Gly Gly Cys Ser Gly Pro Lys Asp Thr Asp Cys Phe Ala Cys Met
 225 230 235 240

Asn Phe Asn Asp Ser Gly Ala Cys Val Thr Gln Cys Pro Gln Thr Phe
 245 250 255

Val Tyr Asn Pro Thr Thr Phe Gln Leu Glu His Asn Phe Asn Ala Lys
 260 265 270

Tyr Thr Tyr Gly Ala Phe Cys Val Lys Lys Cys Pro His Asn Phe Val
 275 280 285

Val Asp Ser Ser Ser Cys Val Arg Ala Cys Pro Ser Ser Lys Met Glu
 290 295 300

Val Glu Glu Asn Gly Ile Lys Met Cys Lys Pro Cys Thr Asp Ile Cys
 305 310 315 320

Pro Lys Ala Cys Asp Gly Ile Gly Thr Gly Ser Leu Met Ser Ala Gln
 325 330 335

Thr Val Asp Ser Ser Asn Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile
 340 345 350

Asn Gly Asn Leu Ile Phe Leu Val Thr Gly Ile His Gly Asp Pro Tyr
 355 360 365

Asn Ala Ile Asp Ala Ile Asp Pro Glu Lys Leu Asn Val Phe Arg Thr
 370 375 380

Val Arg Glu Ile Thr Gly Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn
 385 390 395 400

Met Thr Asp Phe Ser Val Phe Ser Asn Leu Val Thr Ile Gly Gly Arg
 405 410 415

Val Leu Tyr Ser Gly Leu Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile
 420 425 430

Thr Ser Leu Gln Phe Gln Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile
 435 440 445

Tyr Ile Thr Asp Asn Ser Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp
 450 455 460

Thr Thr Leu Phe Ser Thr Ile Asn Gln Arg Ile Val Ile Arg Asp Asn
 465 470 475 480

Arg Arg Ala Glu Asn Cys Thr Ala Glu Gly Met Val Cys Asn His Leu
 485 490 495

Cys Ser Asn Asp Gly Cys Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser
 500 505 510

Cys Arg Arg Phe Ser Arg Gly Lys Ile Cys Ile Glu Ser Cys Asn Leu
 515 520 525

Tyr Asp Gly Glu Phe Arg Glu Phe Glu Asn Gly Ser Ile Cys Val Glu
 530 535 540

Cys Asp Ser Gln Cys Glu Lys Met Glu Asp Gly Leu Leu Thr Cys His
 545 550 555 560

Gly Pro Gly Pro Asp Asn Cys Thr Lys Cys Ser His Phe Lys Asp Gly
 565 570 575

Pro Asn Cys Val Glu Lys Cys Pro Asp Gly Leu Gln Gly Ala Asn Ser
 580 585 590

Phe Ile Phe Lys Tyr Ala Asp Gln Asp Arg Glu Cys His Pro Cys His
 595 600 605

Pro Asn Cys Thr Gln Gly Cys Asn Gly Pro Thr Ser His Asp Cys Ile
610 615 620

Tyr Tyr Pro Trp Thr Gly His Ser Thr Leu Pro Gln His Ala Arg Thr
625 630 635 640

Pro Leu Ile Ala Ala Gly Val Ile Gly Gly Leu Phe Ile Leu Val Ile
645 650 655

Met Ala Leu Thr Phe Ala Val Tyr Val Arg Arg Lys Ser Ile Lys Lys
660 665 670

Lys Arg Ala Leu Arg Arg Phe Leu Glu Thr Glu Leu Val Glu Pro Leu
675 680 685

Thr Pro Ser Gly Thr Ala Pro Asn Gln Ala Gln Leu Arg Ile Leu Lys
690 695 700

Glu Thr Glu Leu Lys Arg Val Lys Val Leu Gly Ser Gly Ala Phe Gly
705 710 715 720

Thr Val Tyr Lys Gly Ile Trp Val Pro Glu Gly Glu Thr Val Lys Ile
725 730 735

Pro Val Ala Ile Lys Ile Leu Asn Glu Thr Thr Gly Pro Lys Ala Asn
740 745 750

Val Glu Phe Met Asp Glu Ala Leu Ile Met Ala Ser Met Asp His Pro
755 760 765

His Leu Val Arg Leu Leu Gly Val Cys Leu Ser Pro Thr Ile Gln Leu
770 775 780

Val Thr Gln Leu Met Pro His Gly Cys Leu Leu Asp Tyr Val His Glu
785 790 795 800

His Lys Asp Asn Ile Gly Ser Gln Leu Leu Leu Asn Trp Cys Val Gln
805 810 815

Ile Ala Lys Gly Met Met Tyr Leu Glu Glu Arg Arg Leu Val His Arg
820 825 830

Asp Leu Ala Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys
835 840 845

Ile Thr Asp Phe Gly Leu Ala Arg Leu Leu Glu Gly Asp Glu Lys Glu
 850 855 860

Tyr Asn Ala Asp Gly Gly Lys Met Pro Ile Lys Trp Met Ala Leu Glu
 865 870 875 880

Cys Ile His Tyr Arg Lys Phe Thr His Gln Ser Asp Val Trp Ser Tyr
 885 890 895

Gly Val Thr Ile Trp Glu Leu Met Thr Phe Gly Gly Lys Pro Tyr Asp
 900 905 910

Gly Ile Pro Thr Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg
 915 920 925

Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Val Met Val
 930 935 940

Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Lys Glu Leu
 945 950 955 960

Ala Ala Glu Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Tyr Leu Val
 965 970 975

Ile Gln Gly Asp Asp Arg Met Lys Leu Pro Ser Pro Asn Asp Ser Lys
 980 985 990

Phe Phe Gln Asn Leu Leu Asp Glu Glu Asp Leu Glu Asp Met Met Asp
 995 1000 1005

Ala Glu Glu Tyr Leu Val Pro Gln Ala Phe Asn Ile Pro Pro Pro
 1010 1015 1020

Ile Tyr Thr Ser Arg Thr Arg Ile Asp Ser Asn Arg Ser Glu Ile
 1025 1030 1035

Gly His Ser Pro Pro Pro Ala Tyr Thr Pro Met Ser Gly Asn Gln
 1040 1045 1050

Phe Val Tyr Gln Asp Gly Gly Phe Ala Thr Gln Gln Gly Met Pro
 1055 1060 1065

Met Pro Tyr Arg Ala Thr Thr Ser Thr Ile Pro Glu Ala Pro Val
 1070 1075 1080

Ala Gln Gly Ala Thr Ala Glu Met Phe Asp Asp Ser Cys Cys Asn
 1085 1090 1095

 Gly Thr Leu Arg Lys Pro Val Ala Pro His Val Gln Glu Asp Ser
 1100 1105 1110

 Ser Thr Gln Arg Tyr Ser Ala Asp Pro Thr Val Phe Ala Pro Glu
 1115 1120 1125

 Arg Asn Pro Arg Gly Glu Leu Asp Glu Glu Gly Tyr Met Thr Pro
 1130 1135 1140

 Met His Asp Lys Pro Lys Gln Glu Tyr Leu Asn Pro Val Glu Glu
 1145 1150 1155

 Asn Pro Phe Val Ser Arg Arg Lys Asn Gly Asp Leu Gln Ala Leu
 1160 1165 1170

 Asp Asn Pro Glu Tyr His Ser Ala Ser Ser Gly Pro Pro Lys Ala
 1175 1180 1185

 Glu Asp Glu Tyr Val Asn Glu Pro Leu Tyr Leu Asn Thr Phe Ala
 1190 1195 1200

 Asn Ala Leu Gly Ser Ala Glu Tyr Met Lys Asn Ser Val Leu Ser
 1205 1210 1215

 Val Pro Glu Lys Ala Lys Lys Ala Phe Asp Asn Pro Asp Tyr Trp
 1220 1225 1230

 Asn His Ser Leu Pro Pro Arg Ser Thr Leu Gln His Pro Asp Tyr
 1235 1240 1245

 Leu Gln Glu Tyr Ser Thr Lys Tyr Phe Tyr Lys Gln Asn Gly Arg
 1250 1255 1260

 Ile Arg Pro Ile Val Ala Glu Asn Pro Glu Tyr Leu Ser Glu Phe
 1265 1270 1275

 Ser Leu Lys Pro Gly Thr Met Leu Pro Pro Pro Pro Tyr Arg His
 1280 1285 1290

 Arg Asn Thr Val Val
 1295